

ISSN: 2162-5751 Vol. 2, No. 2, June 2012



Scientific
Research

Journal of Quantum Information Science



ISSN: 2162-5751



www.scirp.org/journal/jqis

Journal Editorial Board

ISSN 2162-5751 (Print) ISSN 2162-576X (Online)

<http://www.scirp.org/journal/jqis>

Editor in Chief

Prof. Arun Kumar Pati Harish-Chandra Research Institute (HRI), Allahabad, India

Editorial Board

Prof. Nicolas Gisin University of Geneva, Switzerland

Prof. L. B. Levitin Boston University, USA

Prof. Sandu Popescu University of Bristol, UK

Prof. A. K. Rajagopal Inspire Institute, USA

Prof. T. Toffoli Boston University, USA

Prof. V. Vedral University of Oxford, UK

TABLE OF CONTENTS

Volume 2 Number 2

June 2012

Entanglement Generation in Spatially Separated Systems Using Quantum Walk

C. M. Chandrashekar, S. K. Goyal, S. Banerjee.....15

**Dependence of Entanglement on Initial States under Amplitude Damping Channel
in Non-Inertial Frames**

W. P. Zhang, J. F. Deng, J. L. Jing.....23

A Fixed-Phase Quantum Search Algorithm with More Flexible Behavior

X. Li, P. C. Li.....28

Modified Two-Slit Experiments and Complementarity

T. Qureshi.....34

Ito's Formula for the Discrete-Time Quantum Walk in Two Dimensions

C. Ampadu.....40

Journal of Quantum Information Science (JQIS)

Journal Information

SUBSCRIPTIONS

The *Journal of Quantum Information Science* (Online at Scientific Research Publishing, www.SciRP.org) is published quarterly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$39 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

COPYRIGHT

Copyright©2012 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

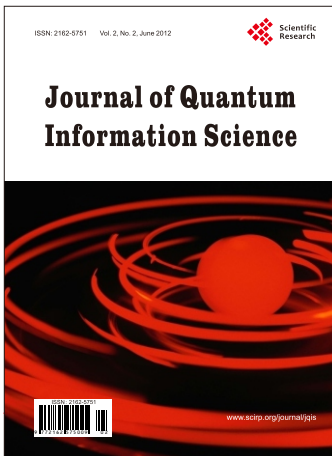
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: jqis@scirp.org



Journal of Quantum Information Science

ISSN: 2162-5751 (Print), 2162-576X (Online)
<http://www.scirp.org/journal/jqis>

Editor-in-Chief

Prof. Arun Kumar Pati

Harish-Chandra Research Institute (HRI), Allahabad, India

Editorial Board

Prof. Nicolas Gisin

University of Geneva, Switzerland

Prof. L. B. Levitin

Boston University, USA

Prof. Sandu Popescu

University of Bristol, UK

Prof. A. K. Rajagopal

Inspire Institute, USA

Prof. T. Toffoli

Boston University, USA

Prof. V. Vedral

University of Oxford, UK

Subject Coverage

The field of Quantum Information Science is the most challenging and hot topic among all branches of science. This field is also quite interdisciplinary in character, and people from quantum theory, computer science, mathematics, information theory, condensed matter physics, many-body physics and many more have been actively involved to understand implications of quantum mechanics in information processing. JQIS aims to publish research papers in the following areas:

- Dynamical Maps: Study of open quantum system; Complete positivity; Beyond completely positive maps; Quantum dynamics as resources.
- Experimental Implementation: Implementation of quantum algorithms and information processing protocols with NMR devices; Ion traps; Neutral atoms; Solid state devices; Quantum optical methods; Cavity QEDs and any other innovative proposals.
- Geometric Quantum Computation: Computation by geometrical phases; Mixed state geometric phases; Abelian; Non-abelian and topological phases; Phase holonomies under unitary evolution and CP maps.
- Quantum Computation: Quantum algorithms; Quantum complexity; Simulation of complex systems; Quantum memory; Quantum mechanical automata; Quantum universal constructors; Quantum algorithms and computations with continuous variables.
- Quantum Cryptography: Application of quantum mechanics in communication; quantum key distribution; Quantum bit commitment; Different kind of attacks on cryptographic protocols.
- Quantum Entanglement: Bell's inequality and non-locality issues; Quantification of entanglement; Measures of entanglement; Entanglement as resource; Detection of entanglement; Conversion of entanglement; Theory of majorisation.
- Quantum Information Processing Protocols: Teleportation; Entanglement swapping; Remote state preparation; Remote state measurement; Entanglement concentration and purification methods; Telecloning; Information concentration.
- Quantum Information Theory: Fundamental issues in quantum information; Quantum cloning; Quantum deleting; Quantum coding; Channel capacities; Data compression; Quantum error-correction; Decoherence; Optimal quantum measurements.
- Relativistic Quantum Information Theory: Entanglement and relativity; Sharing of reference frames in information theory and relativity; Various concepts of quantum information theory in relativity.

JQIS will consider original Letters, Research articles, and short Reviews in the above and related areas. Before publication in JQIS all the submitted papers will be peer-reviewed by the experts in the field. We can plan to bring out JQIS as a monthly journal, hence all the authors can take advantage of rapid publications of their results in this fast growing field. Being an open access journal we can hope to reach a much wider readership compared to other journals in the related areas.

Website and E-Mail

<http://www.scirp.org/journal/jqis>

E-mail: jqis@scirp.org